

Notice of Allowability**Application No.**

10/657,483

Applicant(s)

CURCIO ET AL.

Examiner

Allan Olsen

Art Unit

1792

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed December 28, 2007.
2. ☒ The allowed claim(s) is/are 24-41.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/Allan Olsen/
Primary Examiner, Art Unit 1792

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Anthony M. Del Zoppo, III on March 25, 2008.

In the specification, amend page 1, line 7 as follows:

August 6, 2002, now Patent No. [[____]] 6,645,607, which in turn is a divisional of

In the claims, amend claims 25, 31, 40 and 41 as follows:

25. (amended) The method of claim 24, wherein the first and second nubs of the conductive material adhesive have uniform height.

31. (amended) The method of claim 30, further including laminating the first and second nubs of the conductive material adhesive with substantially similar nubs formed in another dielectric substrate.

Art Unit: 1792

40. (amended) A method for forming a core member for use in laminating to another core member to form a printed wiring board, comprising:

- forming a first copper coating on a first side of a dielectric substrate;

- forming a second copper coating on a second side of the dielectric substrate, wherein the first and second sides are located on opposite sides of the dielectric substrate;

- forming first and second holes, wherein each of the first and second holes extends through all three of the first copper coating, the dielectric substrate, and the second copper coating;

- plating the first and second holes with a conductive metal to form a conductive path in each of the first and second holes between the first and second copper coatings;

- filling the entirety of each of the first and second holes with a conductive material, wherein the conductive material is heated to enhance its flow characteristics;

- heating the conductive adhesive material to about 130 degrees Celsius to advance the cure to about 80% of a complete cure;

- thinning the first and second copper coatings from the entirety of both the first and second sides of the dielectric substrate;

- removing the thinned first and second copper coatings from the entirety of both the first and second sides of the dielectric substrate except for in a first region from the first hole in a direction away from the first hole on one of the first or the second sides of the dielectric substrate, and in a second region from the second hole in a direction away from the second hole on one of the first or the second sides of the dielectric substrate; and

- laminating the first and second nubs of the conductive material with substantially similar nubs formed in another dielectric substrate.

41. (amended) A method for forming a core member for use in laminating to another core member to form a printed wiring board, comprising:

forming a first silver copper coating on a first side of a dielectric substrate;

forming a second copper coating on a second side of the dielectric substrate, wherein the first and second sides are located on opposite sides of the dielectric substrate;

forming first and second holes, wherein each of the first and second holes extends through all three of the first silver copper coating, the dielectric substrate, and the second copper coating;

plating the first and second holes with a conductive metal to form a conductive path in each of the first and second holes between the first silver copper and second copper coatings;

filling the entirety of each of the first and second holes with a conductive material, wherein the conductive material is heated to enhance its flow characteristics, and in which the conductive material fill includes a conductive polymer filled with one of solder, copper particles, silver particles, plated filler particles, or mixtures thereof;

heating the conductive adhesive material to about 130 degrees Celsius to advance the cure to about 20% of a complete cure;

thinning the first silver copper and second copper coatings from the entirety of both the first and second sides of the dielectric substrate;

removing the thinned first silver copper and second copper coatings from the entirety of both the first and second sides of the dielectric substrate except for in a region between the first and second holes on one of the first or the second sides of the dielectric substrate, wherein the a remaining second sub-portion of the first silver copper or second copper coatings connects the conductive adhesive material in the first and second holes together; and

positioning the dielectric substrate between two circuitized members, wherein each of the two circuitized members includes a different circuit trace on one face and a pair of bonding pads on an opposite face and the dielectric substrate is disposed between the faces having the bonding pads, and laminating the dielectric substrate and the two circuitized members together to form the printed wiring board.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allan Olsen whose telephone number is 571-272-1441. The examiner can normally be reached on M, W and F: 1-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Allan Olsen/
Primary Examiner, Art Unit 1792